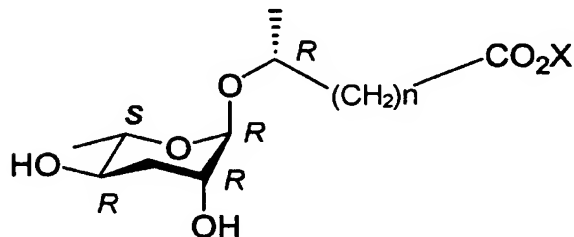


## Claims

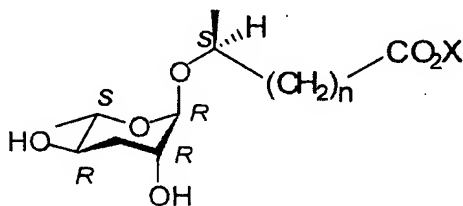
- [1] A pheromone compound having a stereochemistry formula (I-1)



(I-1)

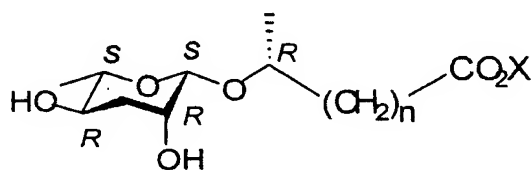
where, X is H, alkali or alkali earth metal and n is 1-6 integer.

- [2] The pheromone compound of claim 1, wherein the compound of formula (I-1) is 6R-(3,6-dideoxy-L-arabino-hexopyranosyloxy)heptanoic acid.
- [3] The pheromone compound of claim 1, wherein the compound of formula (I-1) is alkali or alkali earth metal salt of 6R-(3,6-dideoxy-L-arabino-hexopyranosyloxy)heptanoic acid.
- [4] The pheromone compound of claim 1, wherein the compound of formula (I-1) is S-form stereoisomer having a stereochemistry formula (I-2).



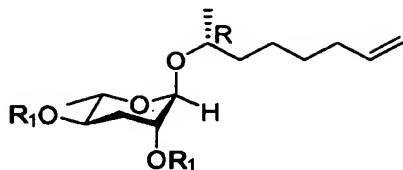
(I-2)

- [5] The pheromone compound of claim 1, wherein the compound of formula (I-1) is C-1' S-form stereoisomer having a stereochemistry formula (I-3).



(I-3)

- [6] A pheromone intermediate having a formula (X).

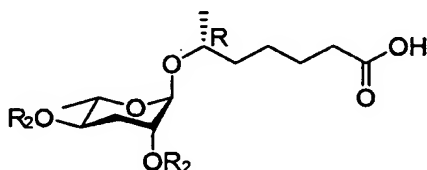


(X)

where,  $R_1$  is H, benzoyl or benzyl group.

[7]

A pheromone intermediate having a formula (XI).



(XI)

where,  $R_2$  is H, benzoyl or benzyl group.

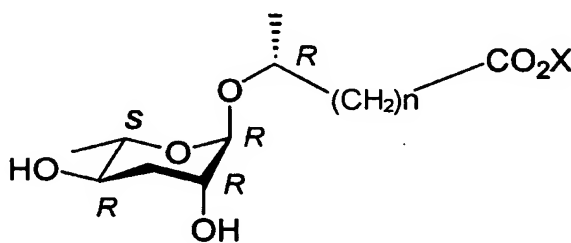
[8]

A preparation method for a pheromone compound having a stereochemistry formula(I-1), the method comprising the steps of:

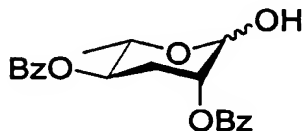
acetalation of compound of formula (II) with compound of formula (III) in the presence of Lewis acid catalyst;

converting an aliphatic terminal double bond of produced coupling reactant to an organic acid by an oxidant; and

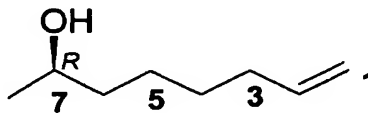
removing two O-benzoyl protecting group of deoxyrhamnosyl group by a base and acidifying by an acid.



(I-1)



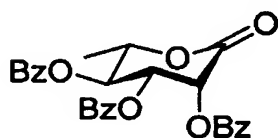
(II)



(III)

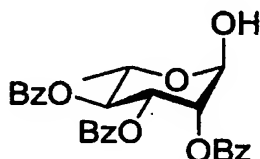
where, Bz is benzoyl or benzyl group.

- [9] The preparation method of claim 8, wherein the catalyst is  $\text{BF}_3 \cdot \text{Et}_2\text{O}$  and molecular sieves.
- [10] The preparation method of claim 8, wherein the oxidant is  $\text{KMnO}_4$  and  $\text{NaHCO}_3$  is used as a supplement agent.
- [11] The preparation method of claim 8, wherein the base is of NaOH or KOH and the acid is amberlite resin type acid.
- [12] The preparation method of claim 8, wherein the compound of formula (II) is obtained from compound of formula (VII).



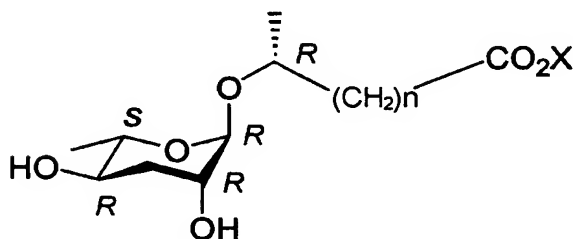
(VII)

- [13] The method of claim 12, wherein the compound of formula (VII) is obtained by oxidizing compound of formula (VI).



(VI)

- [14] A use of a pheromone compound of 6R-(3,6-dideoxy-L-arabino- hexopyranosyloxy)-heptanoic acid having a stereochemistry formula (I-1) and its alkali and alkali earth metal salts as medical agent for curing disease relating to aging and stress.



(I-1)

where, X is H, alkali or alkali earth metal and n is 1-6 integer.